

### ABSTRACT

A photocathode (11) is formed on a predetermined portion of the internal surface of an envelope (2) of an electric tube (1). An avalanche photodiode (APD) (15) is provided inside the envelope (2). The APD (15) is surrounded by a cover (71) and a tubular inner wall (72). A manganese bead (17) and an antimony bead (19) serving as evaporation sources are disposed in the vicinity outside the inner wall (72). The manganese bead (17) and the antimony bead (19) are surrounded by a tubular outer wall (74). The manganese bead (17) and the antimony bead (19) generate metal vapor to thereby form the photocathode (11). In forming the photocathode (11), the cover (71), inner wall (72), outer wall (74) prevent the metal vapor from being deposited on the APD (15) or an unintended portion inside the electron tube (1).